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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
WONG, BLANCHE	

ART UNIT	PAPER NUMBER
2667	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/753,399	Applicant(s) MESH ET AL.	
	Examiner Blanche Wong	Art Unit 2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 January 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11,14-17,20-22 and 25-29* is/are rejected.

7)☒ Claim(s) *12,13,18,19,23,24* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *#4/July 16,2002*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: incorrect numbering.

On p. 7 of the Specification, -- (block 26) – in ln. 3 should be "(block 24)" and – (block 28) – in ln. 11 should be "(block 26)."

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claims 1,2,6-11,14-17,20-22,25-29** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A variety of terms should be avoided.

With regard to claim 1, it is unclear how the services after being processed in their original protocols into packets, can be converted as services, not packets, into optical signals on an optical fiber for transmission into a metro network. Furthermore, it is unclear whether the conversion is from services data, as oppose to services, to optical signals.

With regard to claim 2, it is unclear how the services when received as in *one* aggregated form, can be sorted and de-multiplexed in *each* services according to end destination and to process *each* services into packets according to destination.

With regard to claims 6 and 7, it is unclear whether the encapsulated packet is the encapsulated packet in a frame, as recited in claim 5, or an encapsulated frame, as a result of claim 5.

With regard to claim 8, it is unclear whether the service collection unit's optical transceiver, as recited in claim 5, ln. 8-9, is one of a plurality of service collection unit's optical transceivers, as recited in claim 8, ln. 2.

With regard to claim 16, it is unclear whether the aggregator module is the same one used for aggregating in claim 1.

With regard to claim 17, it is unclear how each service, ln. 4, and like services, ln. 5, is extracted from a plurality segments of various services, ln. 2-3.

With regard to claim 20, it is unclear whether the aggregator is the same one used for aggregating in claim 1, and whether the optical transceiver is the same one as the service collection unit's optical transceiver in claim 5.

4. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the services" in ln. 7,8,10.

Claim 2 recites the limitations "the services" in ln. 3,4, "the optical carrier frames" in ln. 7, "local service ports" in ln. 9.

Claims 6 and 7 recite the limitation "the encapsulated packet" both in ln. 2.

Claim 8 recites the limitation "frames" in ln. 2.

Claim 9 recites the limitation "transmission frames" in ln. 2

Claim 10 recites the limitation "optical transceivers" in ln. 2.

Claim 11 recites the limitation "the bit stream" in ln. 2.

Claim 14 recites the limitations "same type" and "same aggregation sub-module" in ln. 2.

Claim 15 recites the limitation "service collection units" in ln. 2.

Claim 16 recites the limitation "removed packets" and "said packets" in ln. 3 and 4 respectively.

Claim 17 recites the limitation "each service" in ln. 4 and "like services" in ln. 5.

Claim 20 recites the limitations "aggregator" and "optical transceiver" in ln. 4.

Claim 21 recites the limitation "aggregated services" in ln. 2.

Claim 22 recites the limitation "said packets" in ln. 1.

Claim 25 recites the limitations "each service" in ln. 7 and 8 and "that service" in ln. 10.

Claim 26 recites the limitation "the step of receiving" in ln. 2.

Claim 27 recites the limitations "incoming transmission frames" in ln. 3, "service collectiono unit" in ln. 4, "optical transceiver" in ln. 5, "transmission framer" in ln. 6, and "the transmission frames" in ln. 7.

Claim 28 recites the limitation "said step of de-encapsulating" in ln. 2.

Claim 29 recites the limitation "said services" in ln. 3 and 4, "appropriate destination service port" in ln. 4, "said service collection unit" in ln. 5, and "the final destination" in ln. 5.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claims 1-4** are rejected under 35 U.S.C. 103(a) as being unpatentable over Parruck et al. (U.S. Pat No. 6,751,214) in view of Slater (U.S. Pat No. 6,731,656).

With regard to claim 1, Parruck discloses

collecting (multiplexer 402, Fig. 4, col. 2, ln. 34-40; aggregation multiplexer 804, Fig. 8, col. 6, ln. 62-col. 8, ln. 3) a plurality of services data (ATM 404, Packet 406,408 in Fig. 4; ATM cells, packet in Fig. 8) to be transmitted in at least one service collection unit (same SONET frame, Fig. 5A and 5B, col. 6, ln. 20; TDM multiplexer 814, Fig. 8, col. 8, ln. 7);

converting the services (ATM 404, Packet 406,408 in Fig. 4; ATM cells, packet in Fig. 8) into optical signals on an optical fiber (same optical fiber, col. 2, ln. 32-33) for transmission into a metro network; and

sorting (flags 506,508,514,520, Fig. 5A and 5B, col. 5, ln. 59; flag insert block 812, Fig. 8, col. 4) the services from a plurality of packets (packet 510,512,516 in Fig.

5A and 5B; see also col. 5, ln. 50-55; packets in the stream to be transmitted, Fig. 8, col. 8, ln. 5) according to service type in an aggregator (multiplexer 402, Fig. 4, col. 2, ln. 34-40; multiplex 810 in Fig. 8, col. 8, ln. 3), coupled for optical communication to the service collection units (same SONET frame, Fig. 5A and 5B, col. 6, ln. 20; output of TDM multiplexer 814, Fig. 8, col. 8, ln. 8); and

aggregating (same SONET frame, Fig. 5A and 5B, col. 6, ln. 20; TDM multiplexer 814, Fig. 8, col. 8, ln. 7) like services for transmission over a compatible transport network.

However Parruck fails to explicitly show processing the services in their original protocols into packets, as recited in claim 1.

In an analogous art, Slater discloses

processing (transmit equipment 21 in Fig. 2, col. 3, ln. 1-12) the services in their original protocols (three types of inputs, col. 3, ln. 1; see also Ethernet Interface 25, Video CODEC Interface 27, ATM adapter 29 in Fig. 2) into packets (it is inherent in SDH that the transmission is packet-based; see also col. 1, ln. 63-64), as recited in claim 1.

A person of ordinary skill in the art would have been motivated to employ Slater in Parruck in order to obtain signal segmentation. The suggestion/motivation to do so would have been to provide for a means for receiving data including packet based data having a bandwidth greater than said predetermined bandwidth and means for inverse

multiplexing said data in a byte format regardless of packet boundaries onto a plurality of virtual containers for transmission. Slater, col. 1, ln. 63-67. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Parruck and Slater to obtain the invention as specified in claim 1.

With regard to claim 2, Parruck further discloses

receiving (demultiplexer 410, Fig. 4, col. 2, ln. 34-40; demultiplexer 1102, Fig. 11, col. 8, ln. 36) aggregated services in their original protocols (input to demultiplexer 402 or 1002) in an aggregator (input: same SONET frame, Fig. 5A and 5B, col. 6, ln. 20; the stream of mixed ATM/packet over SONET data, Fig. 11, col. 8, ln. 34-35);

sorting or de-multiplexing (demultiplexer 410, Fig. 4, col. 2, ln. 34-40; demultiplexer 1102, Fig. 11, col. 8, ln. 36-col.9, ln. 52) the services according to end destination;

loading the packets onto an optical fiber for transmission to a more local network (where Parruck does not explicit show a optical fiber local network, Parruck does show optical fiber connection for data transmission); and

unloading the packets from the optical carrier (same optical fiber, col. 2, ln. 32-33) frames (input: same SONET frame, Fig. 5A and 5B, col. 6, ln. 20; the stream of mixed ATM/packet over SONET data, Fig. 11, col. 8, ln. 34-35; See also Fig. 4) in a service collection unit (demultiplexer 410, Fig. 4, col. 2, ln. 34-40; demultiplexer 1102, Fig. 11, col. 8, ln. 36);

switching (demultiplexers 1102, 1106, 1110, Fig. 11, col. 8, ln. 31-49) the packets to their local service ports;

de-packing (back to ATM cells 1120 and packets 1122, Fig. 11, col. 9, ln. 11-12) the packets to each service's original format; and

sending each service to an appropriate media (it is inherent that the ATM cells 1120 and packets 1122 goes into its own network).

However, Parruck fails to explicitly show processing the services into packets according to destination, as recited in claim 2.

In an analogous art, Slater further discloses

processing (receive equipment 22 in Fig. 2, col. 3, ln. 15-33) the services into packets according to destination (LAN, Digitised Video, ATM in Fig. 2), as recited in claim 2. Furthermore, Slater clearly show sorting (Enternet interface function 32, video CODEC interface 33, ATM adaptor 34 in Fig. 2, col. 3, ln. 20-33) or de-multiplexing the services according to end destination (LAN, Digitised Video, ATM in Fig. 2).

A person of ordinary skill in the art would have been motivated to employ Slater in Parruck in order to obtain signal segmentation. The suggestion/motivation to do so would have been to provide for a communication system that is suitable for a wide range of broadband data types. Slater, col. 2, ln. 5-8. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which

the invention pertains to combine Parruck and Slater to obtain the invention as specified in claim 2.

With regard to claim 3, Parruck also discloses

loading the transmission frames onto an optical fiber for transmission (same optical fiber, col. 2, ln. 32-33).

With regard to claim 4, Slater also discloses

receiving (transmit equipment 21 in Fig. 2, col. 3, ln. 1-12) services as an incoming bit stream (data can be received in byte format, col. 3, ln. 8) through a service interface (Ethernet Interface 25, Video CODEC Interface 27, ATM adapter 29 in Fig. 2) in the services' original protocols.

6. **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over Parruck and Slater as applied to claims 1-4 above, and further in view of Huang (U.S. Pat No. 6,266,345).

With regard to claim 5, the combination of Parruck and Slater discloses the method according to claim 1. However, the combination fails to explicitly show

segmenting an incoming bit stream of services data;

adding a tag to a header of each segment, each tag including connection identification between a source and a destination end-point of the bit stream;

encapsulating said tagged segment into a PPP packet in a frame; and

transmitting the PPP packet over a service collection unit's optical transceiver as recited in claim 5.

In an analogous art, Huang discloses

segmenting (step 603 in Fig. 6, col. 8, ln. 5-9) an incoming bit stream of services data (SONET transport standard supports data transmission at frequencies 1.5,6,45,140 MB/s and SDH transport standard supports data transmission at frequencies of 2,8,34,140 MB/s, col. 1, ln. 20-24);

adding a tag (step 605 in Fig. 6, col. 8, ln. 11-17) to a header of each segment, each tag including connection identification between a source and a destination end-point of the bit stream;

encapsulating (step 606 in Fig. 6, col. 8, ln. 18-22) said tagged segment into a PPP (Huang also operates in the data layer) packet in a frame (packaged as a single frame in step 606 in Fig. 6, col. 8, ln. 18-22); and

transmitting the PPP packet over a service collection unit's optical transceiver (the transmission medium 150 in Huang may be fiber optics, col. 2, ln. 40-42) as recited in claim 5.

A person of ordinary skill in the art would have been motivated to employ Huang in the combination of Parruck and Slater in order to obtain segmentation with tagging and encapsulation. The suggestion/motivation to do so would have been to provide for dynamic allocation of bandwidth to data with varying bit rates. Huang, col. 1, ln. 52-53.

At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Parruck and Slater and Huang to obtain the invention as specified in claim 5.

Allowable Subject Matter

7. **Claims 12,13,18,19,23,24** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Double Patenting

8. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

9. **Claim 1** is provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 1 of copending Application No. 09/753,513. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

10. **Claim 5** is provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 1 of copending Application No. 09/753,400. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Besset-Bathias (U.S. Pat No. 6,704,315) discloses a segmentation and packetization steps.

Cantoni et al. (U.S. Pat No. 5,050,166) discloses a method and apparatus for transmitting variable length messages from a source 42 on a network in fixed length slots, requiring segmentation 48. Fig. 7.

Goodman et al. (U.S. Pat No. 6,636,529) discloses an interface for converting a variety of incoming digital signals into SDH/SONET format for transmission. Headers are used to encapsulate incoming packets and formats of each packet do not need to be identified.

Tezuka (U.S. Pat No. 6,331,989) discloses a multiplex transmission method and system where a transmitter uses a multiplexing circuit 1 to multiplex a plurality of digital signals and outputs to the optical fiber 9.

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blanche Wong whose telephone number is 703-305-8963. The examiner can normally be reached on Monday through Friday, 830am to 530pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H Pham can be reached on 703-305-4378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BW
June 27, 2004

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